Description

System For Monitoring Dilution

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Technical Field

[01] This invention relates to a system for monitoring a dilution and more particularly to monitoring the dilution of a first fluid to a second fluid.

Background

[02] The cleanliness of a fluid, in many applications, is essential to the operation and functionality of the fluid. In many applications, the cleanliness of the fluid determines the longevity of the operation. One such example, being a lubricating oil in an engine. As the engine operates, the lubricating oil becomes contaminated. Such contaminant being soot particles, iron, aluminum, cooper etc. Other contaminants being unburned fuel. As unburned fuel bypasses the rings the fuel is mixed with the lubricating oil. The ratio of fuel within the oil increases, thereby reducing the lubricating characteristics of the oil to a level which results in the oil film between moving parts breaking down and hence excess wear. In another example, the lubricating oil of the engine can be contaminated by a coolant, such as water or a mixture of water and antifreeze. Again, as the ratio of the contaminants, coolant, within the oil increases, the lubricating characteristics of the oil is reduced resulting in the longevity of the moving parts being reduced due to excess wear. Many contaminants, such as wear particles, are compensated for by changing the oil in a timely manner. However, some contaminants, such as unburned fuel and coolant are not necessarily predictable and thus, conventional oil changes may not compensate for such contaminants. Unburned fuel and coolant can very quickly deteriorate the functionality of lubricating oil causing increased wear particles. Thus, it is